[0062] The storage unit **175** may store signals or data that are input/output to the foldable display apparatus **100** and correspond to operations of the mobile communication unit **120**, the sub-communication unit **130**, the multimedia module **140**, a camera module, a GPS module, the input/output module **160**, the storage unit **175**, the power supply unit **170**, and the display panel **190** under the control of the control unit **110**. The storage unit **175** may store control programs and applications used to control the foldable display apparatus **100** or the control unit **110**.

[0063] The term "storage unit" may refer to the storage unit **175**, the ROM **112**, the RAM **113**, or a memory card mounted in the foldable display apparatus **100**. The storage unit **175** may include, for example, a non-volatile memory, a volatile memory, a hard disk drive (HDD), or a solid state drive (SSD).

[0064] The power supply unit **170** may supply power to at least one battery arranged in a housing of the foldable display apparatus **100** under the control of the control unit **110**. Further, the power supply unit **170** may supply power, which is input from an external power source via a wired cable connected to the connector, to each component of the foldable display apparatus **100**.

[0065] The display panel **190** may output a user interface corresponding to various services for users. The display panel **190** may include a touch screen. Accordingly, a signal corresponding to at least one touch input by a user may be transmitted to the control unit **110**.

[0066] The folding information detection unit **180** may detect folding information based on the folded state of the foldable display apparatus **100**. The folding information detected from folding information detection unit **180** may be provided to a user, for example, by being displayed on the display panel **190** via the control unit **110**, or by being presented to the user via sound or vibration under control of the control unit **110**.

[0067] FIG. **5** is a block diagram of the structure of the folding information detection unit **180**, according to an exemplary embodiment of the present invention. The folding information detection unit **180** may include, for example, a sensing unit **181** (e.g., a sensing circuit), a time measurement unit **183** (e.g., a time measurement circuit), a folding information determination unit **185** (e.g., a folding information determination circuit), and a folding information storage unit **187** (e.g., a folding information storage circuit).

[0068] The sensing unit **181** may determine the folded state and/or the unfolded state of the foldable display apparatus **100** based on the strain values occurring in the folding area in which the foldable display apparatus **100** is folded.

[0069] In exemplary embodiments, the sensing unit **181** may determine whether the foldable display apparatus **100** is in a folded state or an unfolded state by receiving an output value from the strain sensor(s) **181***a* arranged in the folding area. For example, in a case in which the strain value ϵ of the folding area is in a range of $a*\epsilon_{ref} \leq \epsilon \leq \epsilon_{max}$ (a is between 0.5 and 1), the foldable display apparatus **100** may be in the front folded state. Alternatively, in a case in which the strain value ϵ of the folding area is in a range of $-\epsilon_{ref} \leq \epsilon \leq a*\epsilon_{max}$ (a is between 0.5 and 1), the foldable display apparatus **100** may be in the back folded state.

[0070] In an exemplary embodiment, the sensing unit **181** may determine whether the foldable display apparatus **100** is in a folded state or an unfolded state according to an interference value of pixels in the folding area of the foldable display apparatus **100**.

[0071] The time measurement unit **183** may measure a folding accumulation time and/or an unfolding accumulation time when the folded state and/or the unfolded state of the foldable display apparatus **100** is maintained. For example, the folding accumulation time indicates an amount of time that the display apparatus **100** has been maintained in a folded state, and the unfolding accumulation time indicates an amount of time that the display apparatus **100** has been maintained in an unfolded state.

[0072] The folding information determination unit **185** may determine the folding information based on the folding accumulation time. In exemplary embodiments, the folding information determination unit **185** may add the folding accumulation time when the front folded state of the foldable display apparatus **100** is maintained, or when the back folded state of the foldable display apparatus **100** is maintained. Alternatively, the folding information determination unit **185** may calculate a value by subtracting the unfolding accumulation time from the folding accumulation time. Alternatively, the folding information determination unit **185** may determine the folding information based on a front folded state duration and a back folded state duration. For example, the front folded state duration and the back folded state duration may be separately determined, or an added value or a subtracted value may be calculated.

[0073] In exemplary embodiments, the folding information determination unit **185** may determine whether a time when a one-time folded state is maintained reaches a threshold time. For example, a time when the foldable display apparatus **100** is folded in a single state may be compared to a threshold state.

[0074] The folding information storage unit **187** stores the folding information determined by the folding information determination unit **185**. The folding information that is stored in the folding information storage unit **187** may be displayed on the display panel **190** via the control unit **110**. Further, the folding information may be utilized with an audio signal or a vibration signal. For example, when the one-time folded state reaches the threshold time, an alarm may ring or the foldable display apparatus **100** may vibrate.

[0075] The foldable display apparatus **100** may be embodied in various forms such as, for example, a mobile device described with reference to FIGS. **4** and **5**, a TV, a medical data display apparatus, etc.

[0076] FIG. **6** is a flowchart of a method of displaying folding information corresponding to the foldable display apparatus **100**, according to an exemplary embodiment of the present invention.

[0077] At S**1**, the folded state of the foldable display apparatus **100** is evaluated. The folded state may be evaluated based on the strain values of the folding area in which the foldable display apparatus **100** is folded. The folded state may include, for example, the front folded state and the back folded state.

[0078] At S**2**, the folding accumulation time indicating an amount of time that the folded state of the foldable display apparatus **100** is maintained is measured. The folding accumulation time may separately reflect the front folding accumulation time and the back folding accumulation time.

[0079] At S**3**, the folding information is determined based on the folding accumulation time. In exemplary embodiments, the folding information may be an accumulation time from an initialization point of the foldable display apparatus **100** to the front folding state.